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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

VERDIER, CHRISTOPHER M

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 01/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/022,770

Applicant(s)

ITO ET AL.

Examiner

Christopher Verdier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 4-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3, 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Election/Restrictions

Applicant's election with traverse of species I, figures 1-3, claims 1-3 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that the reasons relied on by the examiner for holding the inventions as claimed as either independent or distinct are not stated, as required by MPEP 816. This is not found persuasive because MPEP 816 only pertains to inventions other than species. MPEP 814 states that for species, the particular limitations in the claims and the reasons why such limitations are considered to restrict the claims need only be mentioned if necessary to make the requirement clear. Applicants' specification (pages 10-13) clearly states which figures are considered as different embodiments. Additionally, review of pending claims 1-9 clearly shows that each of claims 4-9, for example, contain limitations which are not recited in claims 1-3, for example. MPEP 814 states that the mode of how to require restriction between species is set forth in MPEP 809.02(a). Pursuant to MPEP 809.02(a), the species were clearly identified as to which figures they pertain to. MPEP 809.02(a) does not require that the reasons relied on by the examiner for holding the inventions as claimed as either independent or distinct must be stated. With regard to Applicants' argument that claims to be restricted to different species must be mutually exclusive and that the previous Office action did address whether the pending claims recite mutually exclusive characteristics, this argument is not persuasive. The procedure set forth in MPEP 809.02(a) was followed, and MPEP 809.02(a) does not require that it be explicitly stated why the pending claims recite mutually exclusive characteristics. As set forth above MPEP 809.02(a) only requires that the species be identified as to which figures they pertain to. Additionally, review of pending claims 1-9 clearly shows that the claims restricted to different species recite or contain limitations to the mutually exclusive characteristics of the

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species. Note, for example, the last paragraphs of claims 4, 5, 6, and 7, contain limitations to the mutually exclusive characteristics of the species not found in the last paragraphs of claims 1, 2, and 3. With regard to Applicants' argument that the claims of the invention appear to be part of an overlapping search area, and that examination of the entire application would not place a serious burden on the examiner, this is not persuasive. The search for claims 1-3 is restricted to class 415. Claims 7-9, for example, require additional searches in class 416, impellers, because these claims recite features of the moving blades. Claims 4-6, which recite additional features of the stationary blades, require additional searching in class 415, and the number of permutations of the stationary blade and moving blade characteristics recited in all claims would result in a serious burden if all claims were to be examined in a single application.

The requirement is still deemed proper and is therefore made FINAL.

Claims 4-9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim.

Drawings

Figures 14A, 16, 17, and 19A should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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The drawings are objected to because in figure 17, a lead line for reference numeral 25 is required. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because throughout the specification, in occurrences too numerous to mention in every single instance, it refers to a moving blade "chip" portion. See for example page 2, line 2, page 2, line 9, page 2, line 21, etc. While applicant may be his own lexicographer, the term "chip" to refer to the moving blade portion 7 departs so diversely from accepted common usage in the art that this would lead to confusion. MPEP 2111.01. It appears that Applicant may intend for "chip" to actually mean the blade tip portion. Appropriate correction is required.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-3 contain either the term "chips" or "chip" to refer to portions of the moving blades. See claim 1, lines 4, 6, 8, and 10; claim 2, lines 4, 6, 8, and 9; and claim 3, lines 4, 6, 8, 10, 11, and 13. As set forth previously above, these terms are so diverse from accepted common usage in the art that this would lead to confusion. MPEP 2111.01. It appears that Applicant may intend for "chip" and "chips" to actually mean the blade tip portion.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1, as far as it is understood, is rejected under 35 U.S.C. 102(b) as being anticipated by Soviet Union Patent 1,605,002 (figures 1 and 4). Note the gas turbine having stationary blades 8/11 arrayed in a circle on a casing 1, moving blades 10 arrayed in a circle on a rotor 2, with an unnumbered clearance provided between moving blade tips and the casing, with a front edge included angle (near 12 in figure 4) at the tip portion of the stationary blade 11 that is the stationary blade at the rear stage of the moving blade being larger than a front edge included angle at other portions (portions above and below portion 20) than the tip portion of the stationary blade.

Claim 2, as far as it is understood, is rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent 10-196,303 (figures 1-2). Note the English abstract which states that the invention applies to gas turbines used as moving blades or stationary blades. The gas turbine has stationary blades 1 which are inherently arrayed in a circle on a casing, unnumbered moving blades arrayed in a circle on a rotor, with an inherent unnumbered clearance provided between moving blade tips and the casing, with an entrance metal angle (near the radially outer tip at R in figure 1) at the tip portion of the stationary blade 1 that is the stationary blade at the rear stage of the moving blade being smaller than an entrance metal angle at other portions (portions above and below reference numeral 3 in figure 1) than the tip portion of the stationary blade, due to the blade inlet part 2 being protruded toward the belly side 4 of the blade 1 and formed in a curve shape forming a bow shape in a radial direction.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 1, as far as it is understood, is also rejected under 35 U.S.C. 103(a) as being unpatentable over Ferleger 5,221,181 in view of Soviet Union Patent 1,605,002. Ferleger (figures 1-3 and table I) discloses a turbine having stationary blades 5C, 4C arrayed in a circle on an unnumbered casing, moving blades 5R, 4R arrayed in a circle on an unnumbered rotor, with an unnumbered clearance provided between moving blade tips and the casing, with a front edge included angle (see item 12 in table I) at the tip portion of the stationary blade 11 that is the stationary blade at the rear stage of the moving blade being larger (having a value of 59.42 degrees) than a front edge included angle at other portions (the portions with 54.98 and 49.19 degrees in table I) than the tip portion of the stationary blade. However, the turbine is a steam turbine and not a gas turbine.

Soviet Union Patent 1,605,002 (figures 1 and 4) teaches that optimized stator blade designs may be applied to either steam or gas turbines, for the purpose of increasing mechanical efficiency.

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It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize the blade arrangement of Ferleger in a gas turbine, as taught by Soviet Union Patent 1,605,002, for the purpose of increasing mechanical efficiency.

Allowable Subject Matter


Claim 3 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (703)-308-2638. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (703) 308-1044. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9302.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

C.V.
January 24, 2004


Christopher Verdier
Primary Examiner
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